STATE: **MONTANA**
GRANT TITLE: **High Priority Terrestrial Montana Habitats and Wildlife Species SWG Conservation Program (FY2015)**
MT TRACKING #: **T–37–HM-6**

PROJECT 1. Species-Based Conservation

Objectives

A. ***To work with private landowners during the 2014-2015 field season in order to establish long-term conservation leases on priority grassland and wetland-grassland complexes in north-central Montana.***

B. ***To enhance conservation efforts for at risk species or groups of species through focused monitoring and population assessments, focused habitat or species restoration, and partner collaboration.***

Accomplishments

Objective A. variance-

FWP proposed to offer 30-year conservation leases to private landowners in priority grassland and wetland-grassland complexes in north-central Montana. Implementation of this lease program proved difficult due to other on-the-ground conservation programs and an inability to secure adequate match for leases. No specific properties were identified nor secured for long-term leases this past year.

Objective B. accomplishments-

State Wildlife Grant dollars were used to fund wildlife biologists in FWP Regions 1, 4 and 7 (Figure 1) to address high priority species conservation issues within these areas. SWG funding was also used to support a statewide avian conservation biologist to organize and implement conservation efforts such as the Montana Curlew Habitat Initiative. These biologists worked cooperatively with conservation partners, universities, federal and state partners when and where appropriate using the most current scientific information to develop and implement conservation programs for high priority terrestrial species. Staff conducted intensive species-specific monitoring to ascertain important demographic vital rates and how those vital rates are affected by existing land use practices or may be modified by changing land use practices. In addition, staff studied how species have responded to specific conservation actions.

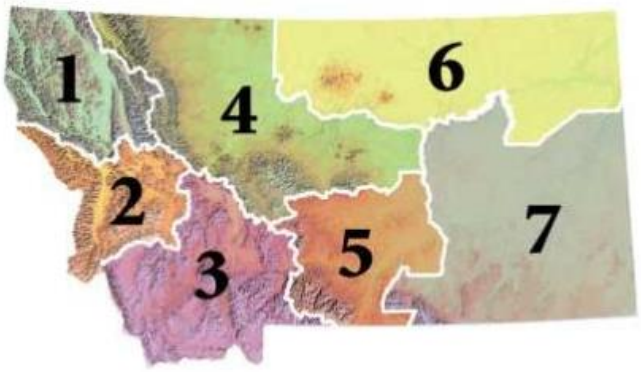

Figure 1. Map of Montana broken down by FWP Region. Biologists have been hired in part with SWG funding in Regions 1, 4, and 7. The avian biologist duties are statewide.

Development Impacts to Wildlife

Biologists in Regions 4 and 7 embarked on an effort to increase the efficiency of commenting on energy development projects in order to adequately express concerns for Species of Concern and other species potentially impacted by development. Comments were generated based on literature reviews of specific species or groups of species with common habitat needs. Current recommendations made by other agencies in western states and the document developed by FWP, "Fish and Wildlife Recommendations for Oil and Gas Development" were also consulted as reference. Comments included timing stipulations based on critical periods for each species (e.g. breeding seasons), appropriate buffers for development activities, and recommendations on construction of energy structures (e.g. capping oil pits).

Hoary Marmot Surveys for Conservation

Hoary marmots are considered at risk in Montana due to their assumed reliance on high elevation habitats and a limited capacity for distribution among these habitats. Twenty-three locations within 11 mountain ranges were identified as part of a Montana study of hoary marmot demographics. We considered each location as a distinct population because the longest dispersal distance recorded for any species of marmot is 17 km and sites are 15-370 km apart (Armitage, 1975.) Marmots were surveyed based on methods modified from Witczuk et al. (2008). Polygons of potentially occupied habitat were generated in ArcGIS based on land cover types commonly associated with marmots. Eight study sites in five mountain ranges were visited in FY2015 and 21 marmots were captured during 168 trap days. Tissue samples were collected from 20 of these marmots. We caught one marmot in the Whitefish Range, five in the Mission Range, eight in the Swan Range, and six in Glacier National Park.

In July and August 2014, we sampled 47 sites during 79 surveys in the Swan (36 surveys) and Whitefish (29) mountain ranges, and Glacier National Park (14). At least one marmot was detected by at least one observer in 12 of these surveys (15%). Overall, the probability of detecting a marmot was 0.59 (SE = 0.10) and the probability of occupancy across all sites was 0.27 (SE = 0.10). Marmots were more likely to occupy sites with increased cover of boulders and wet meadow and less likely to occupy sites with increased cover of shrubs and grasses.

Armitage, K. B. 1975. Social behavior and population dynamics of marmots. Oikos 26: 341–354.

Witczuk, J., S. Pagacz, and L.S. Mills. 2008. Optimizing methods for monitoring programs: Olympic marmots as a case study. Wildlife Research 35:788–797.

Golden Eagle Monitoring for Conservation Focus

Aerial surveys to locate golden eagle nests were conducted in three areas of Montana between April and June 2015. Six FWP biologists in Region 4, 5, 6, and 7 conducted the surveys by helicopter or fixed wing. The surveys were located in areas where predictive models identified highly suitable habitat and/or high risk for wind development. All observations of golden eagles and their nests were recorded during the survey (Figure 2). Nests were classified as active or inactive. During the survey, 252 golden eagle observations were recorded including 80 active nests. A total of 166 adult golden eagles were observed during the flights and 63 nestlings were

observed. Most golden eagle nests were associated with cliffs, but some nests were located in plains cottonwood trees. The highest golden eagle nesting density was found in Carbon County.

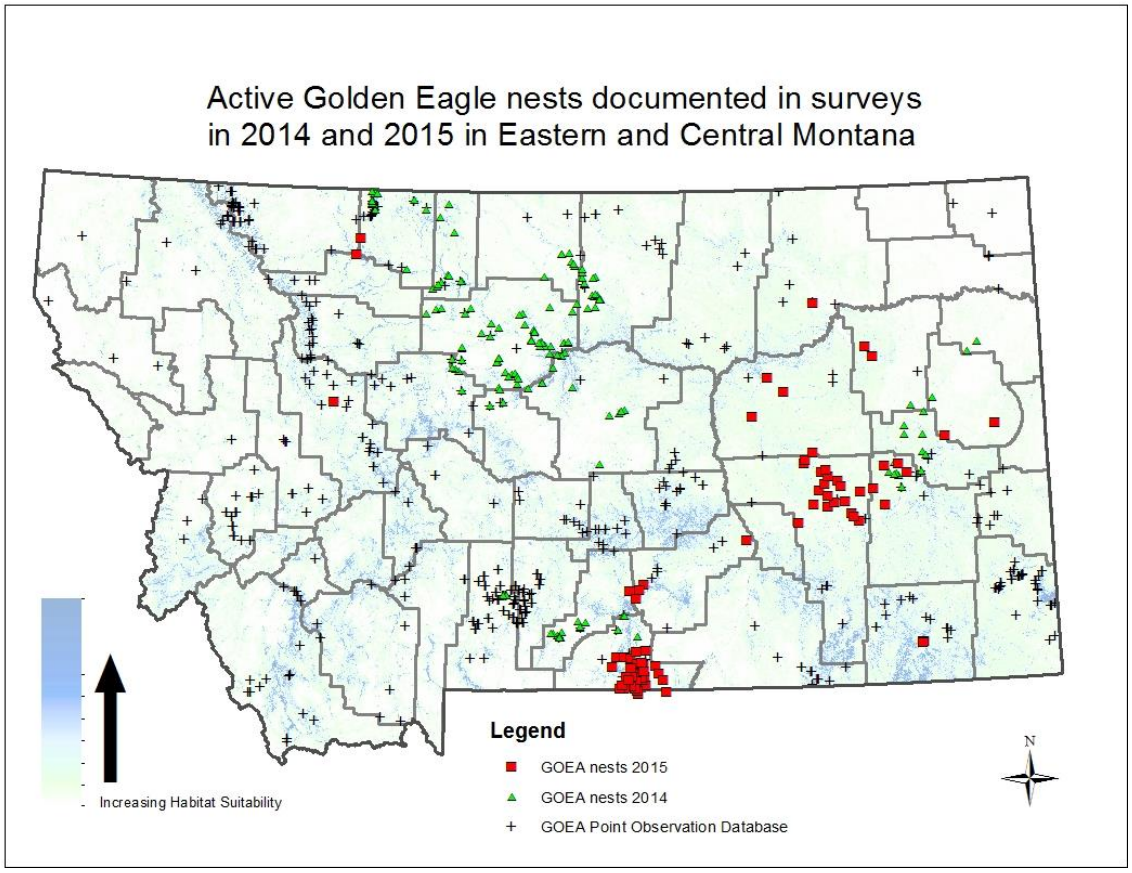

Figure 2. Active golden eagle nests documented in 2014 and 2015 surveys.

Long-Billed Curlew Conservation

FWP continued working with Montana Audubon and other partners within the Montana Bird Conservation Partnership to implement the Long-Billed Curlew Habitat Initiative, launched in 2013. Work continued in 2015 to survey curlews in western Montana and to begin implementation of habitat conservation work. FWP worked with Montana Audubon staff to conduct curlew surveys in the Upper Missouri Valley and in the Mission Valley. These data will add to the existing data collected through this initiative to update habitat suitability maps. The partnership is compiling potential conservation strategies for the Upper Missouri Valley and the Mission Valley areas.

Short-Eared Owls Surveys and Habitat Monitoring

FWP staff conducted approximately 66 hours of surveys for short-eared owls on the Ninepipe Wildlife Management Area in the Mission Valley in Region 1, locating three nests. Monitoring will continue into the future in attempts to tie habitat conditions with short eared owl demographics.

PROJECT 2. Species Survey and Inventory

Objectives:

A. To employ area biologists whose focus is to complete baseline inventory surveys for species diversity, focusing on designated species groups or at risk species.

B. To employ an Avian Conservation Biologist to prioritize and facilitate partnerships and on-the-ground monitoring and conservation projects. Organize statewide monitoring effort for nongame birds on state-owned and managed properties, as well as other private lands as available, and utilize new survey information to support potential conservation actions and assess on-going strategies.

C. To continue assessment of the distribution and status of terrestrial species under-represented in state databases and utilize new survey information to support potential conservation actions and assess on-going strategies. Focus monitoring effort on groups of species identified in isolated regions or habitats of Montana in order to remove these species from the 'inventory needed' list or to raise conservation concern for individual species. Update Point of Observation Database with new species status and distribution information and review Species of Concern lists relative to new information.

Objective A. accomplishments–

Black Swift Monitoring

Fourteen waterfalls were monitored for occupancy by nesting black swifts in the late summer of 2015. Nesting data on swifts in Montana is lacking and currently provides only an incomplete picture of population distribution and viability. At least six sites were occupied by nesting swifts: many of the sites were difficult to determine nesting activity with confidence.

Peregrine Falcon Monitoring

Calendar year 2015 was the final year of post de-listing monitoring for peregrine falcons. Twenty-five new territories were identified and over 120 territories were deemed active through the efforts of the Montana Peregrine Institute, regional FWP biologists, other agency biologists and volunteers involved in the Peregrine Watch program.

Colonial Waterbirds

Waterbird surveys were conducted at Freezeout Lake Wildlife Management Area in Region 4 in June for the 7th consecutive season. Nest counts were obtained seven species.

Objective B. accomplishments-

Avian Biologist Activities

This biologist facilitates discussions of the Montana Bird Conservation Partnership and works with the University of Montana, Montana Audubon, Rocky Mountain Bird Observatory, Idaho Bird Observatory, US Forest Service, US Fish and Wildlife Service, Joint Ventures and Montana Natural Heritage Program to complete much needed avian monitoring. The coordinator maintains working relationships with other state coordinators through Pacific and Central Flyway committee

representation, i.e. Nongame Technical Committee, that have furthered Montana's involvement in range-wide species monitoring. The Montana Bird Conservation Partnership (MBCP) met in November 2014 to focus on refining Montana's statewide monitoring strategy.

Montana Fish, Wildlife and Parks, in conjunction with MBCP partners have been assessing landbird monitoring efforts to evaluate their utility for management. This includes assessing past participation with the Integrated Bird Monitoring by Bird Conservation Region program, and engaging volunteers to survey new Breeding Bird Survey Routes. Within the next year, plans will be developed to determine landbird monitoring strategies for FY16.

The Avian Biologist worked with region staff and subject experts to design monitoring protocols for high elevations bird species on the list of Species in Need of Inventory (see Figure 3 and Appendix I.) Targeted monitoring for black-rosy finches is to be conducted in late summer, 2015.

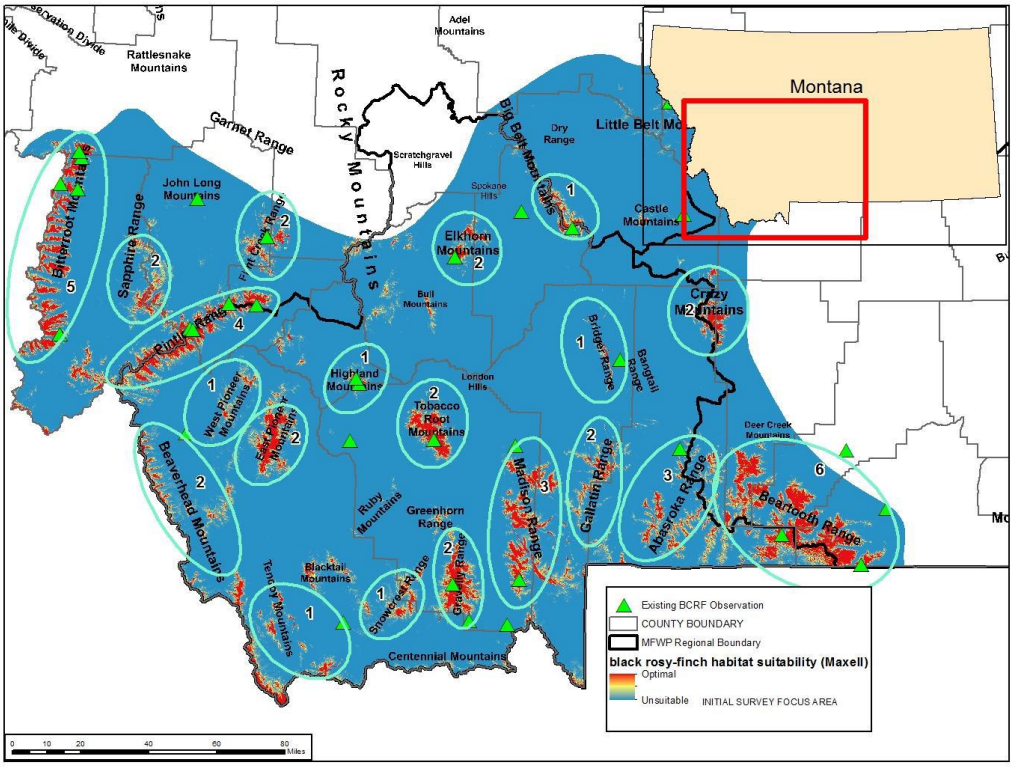

Figure 3. Areas in southwest Montana targeted for high elevation finch surveys.

Objective C. accomplishments-

FWP and cooperators regularly identify information gaps for species or groups of species and focus monitoring efforts in isolated regions or habitats of Montana in order to collect information that may lead to removal of these species from the 'inventory needed' list or to raise conservation concern where necessary. Specifically, SWG dollars were used to fund wildlife biologists in FWP Regions 1, 4 and 7 to address high priority species inventory needs within these areas. The Avian Conservation Biologist also assisted with these efforts statewide. MFWP staff continued to look for black swifts, northern bog lemmings, Coeur d'Alene salamanders, smooth greensnakes, and

other rare species across the state to add to the very limited current information. New observations were added to databases throughout 2015. Biologists worked with Montana Audubon in particular to organize citizen scientists to survey for black swifts, harlequin ducks, golden eagles and white-tailed ptarmigan.

Species Monitoring

Bog lemming surveys occurred in suitable habitat in an effort to validate predictive maps and have current information for any petition for USFWS listing. Experimental methodologies to detect bog lemmings are being tested and refined to increase detection rates and increase the certainty behind negative detections.

Eastern screech-owls were targeted along the Tongue and Powder rivers for 5 nights to increase breeding records within the MTNHP database and increase our knowledge on distribution. We targeted riparian areas within 0.5 miles of roads along the Tongue and Powder Rivers. For the Tongue River, we surveyed from the 12 Mile Dam Fishing Access Site to Garland and from Ashland to the Tongue River Reservoir. For the Powder River, we surveyed from Locate to Powderville and from Broadus to the Wyoming border. The same protocol for owl surveys conducted in 2014 was used with a few alterations based on suggestions made during the 2014 survey effort. We detected indirect breeding evidence for 21 eastern screech-owls. We also incidentally detected indirect breeding evidence for 19 great horned owls and 4 long-eared owls.

Rangewide harlequin duck surveys were conducted in late August and September 2014. Stretches of river with known historical occupancy or high suitability were surveyed by foot with the assistance of more than 25 biologists and technicians. Rivers and tributaries were surveyed in Glacier National Park, along the south fork of the Flathead River, along the east front of the Rocky Mountains, within the Lower Clark Fork drainage, along the Whitefish Mountains, and within the Middle Clark Fork Drainage. More than 31 Harlequin duck hens were recorded with broods totaling 115 ducklings. Surveys will be conducted again during the same time period in 2015.

Bat monitoring, data management, and staff training

We continued to work with the Montana Natural Heritage Program (MNHP) to analyze bat acoustic surveillance data and monitor environmental conditions relative to bat activity to include. Efforts to date including effort from FY2015; (1) 35,200 nights sampled across 69 detectors, (3) 4.2 million bat passes recorded, (4) 34,162 call sequences examined by hand, (5) 5,279 call sequences definitively identified to species, (6) 1,421 records of monthly species presence in Montana, (7) 6,612,037 temperature logger records, (8) 46,764,533 weather station records across 593 stations. In collaboration with MNHP staff we continue to work with Northern Rocky Mountain Grotto members on winter surveys of bat hibernacula. Approximately 30 hibernacula were surveyed during the winter of 2014-2015.

Numerous trainings and workshops were held across Montana in attempts to encourage more data collection on Montana's bats to include: (1) a day-long training workshop on "Montana's Bat and White-nose Syndrome Surveillance Efforts: with an emphasis on recording and analyzing bat echolocation calls" that was attended by 42 individuals from a variety of state and federal agencies and consulting companies at the Montana Chapter of the Wildlife Society Meetings; (2) a three day-long training workshop on "acoustic and mist net training for Montana's bat species" that was

attended by 28 individuals from a variety of state and federal agencies and consulting companies at the Beartooth Wildlife Management Area; (3) three presentations on Montana's bridge, cave, and acoustic surveillance efforts to members of the Montana Chapter of the Wildlife Society; and (4) a presentation to Northern Rocky Mountain Grotto members and representatives from the USFS and FWP on the status of bat and white-nose syndrome surveillance efforts in Montana at the annual grotto meeting. The Montana bat and white-nose syndrome surveillance plan and protocols were finalized in FY2015 and can be found at http://mtnhp.org/.

Data Management and Species of Concern classification

A backlog of animal observations and nongame wildlife survey efforts between 2006 and 2014 that was associated with Scientific Collector's permits was entered into the statewide Point Observation and Survey Locations databases so that this information is viewable to all state and federal agencies on the MapViewer and FWP Mapper websites. Some of this information had come in from other data sources so every record had to be hand reviewed to avoid entry of duplicate information. Nearly 600 new structured survey locations and 5,000 new animal observations were added. Data formatting examples were provided to FWP in order to speed future entry and appending of Scientific Collector's Permit Data.

On the broader data management front: (1) 94,269 observation records were added to the point observation database bringing the total number of animal observation records to more than 1.65 million; (2) 23,182 structured survey locations were added to the structured survey locations database bringing the total number of structured survey records to 181,520; and (3) 9,748 records were reviewed for final acceptance into the animal point observation database.

Montana Field Guide and Animal Species of Concern reports were updated to reflect new conservation and inventory status rankings associated with the State Wildlife Action Plan update (i.e. from CFWCS Tier to SGCN and SGIN). We reviewed and updated the state status of red knot and northern myotis. We also updated the wolverine and yellow-billed cuckoo accounts and status rankings on the Montana Field Guide and other web pages.

IV. PROGRAM FUNDING

FY2015 Grant Funding Segment Requested Amounts:

	Federal Share		Non-Federal Share		Totals
Direct Costs:	$527,089		$285,072		$812,161
Indirect @ 19.6%:	$103,309		$55,874		$159,184
Total:	$630,398	65%	$340,946	35%	$971,345

***The non-federal share will be in the form of general license account dollars, university waived overhead, non-federal grant awards, donations to the nongame program, and volunteer hours.*

V. SCHEDULE

All proposed work was performed between July 1, 2014 – June 30, 2015.

VI. LOCATION

Grant work was conducted across the state as appropriate.

VII. PROJECT PERSONNEL

Adam Brooks, Federal Aid Program Manager	FWP Helena	* 444-3032
Caryn Dearing, Operations Bureau Chief	FWP Helena	444-3677
Kristi DuBois, Wildlife Biologist	FWP Missoula	542-5551
Claire Gower, Wildlife Biologist	FWP Bozeman	994-5953
Chris Hammond, Wildlife Biologist	FWP Kalispell	751-4582
Lauri Hanauska-Brown, Nongame Bureau Chief	FWP Helena	444-5209
Heather Harris, Wildlife Biologist	FWP Glasgow	228-3725
Bryce Maxell, Senior Zoologist	MHNP Helena	444-3655
Ken McDonald, Division Administrator	FWP Helena	444-5645
Megan O'Reilly, Wildlife Biologist	FWP Glasgow	247-2966
Brandi Skone, Wildlife Biologist	FWP Miles City	234-0948
Kristina Smucker, Wildlife Biologist	FWP Great Falls	454-5876

*Area code for all phone numbers is 406

APPENDIX I - High Alpine Multi-Species Survey Methodology
Priority Species – Black Rosy Finch – MFWP Regions 2, 3, and 5

Objective(s):
Remove species from the Species of Greatest Inventory Need (SGIN) list. Accomplish this by:
(1) Demonstrating sufficient survey effort using suitable standardized surveys within appropriate habitats across the species known range in Montana.
(2) Developing a simple/logistically feasible/inexpensive survey methodology that is consistent among surveyors, which will allow a maximum amount of suitable habitat to be surveyed per season and for opportunistic observations of other SGIN, Species of Concern (SOC), and Potential Species of Concern (PSOC) to be recorded.
(3) Collecting adequate data to prevent them remaining on the list and/or being upgraded to PSOC.

Survey Area and timeline:
Mountain Ranges in SW Montana (MFWP Regions 2, 3, 5; See Figure 1). Predicted ranges have been described using the Montana Natural Heritage Program (MNHP) habitat suitability model and an approximate number of transects per mountain range have been defined based on mountain range size. Surveys will be conducted in 2015 and 2016.

H**abitat type to focus survey effort:**
Black rosy finches are found nesting in crevices in cliffs, rock slides and talus among glaciers and snowfields above timberline. They are often found nesting on north or north east facing slopes. In summer they are commonly associated with the edges of snow fields and glaciers as they forage on windblown insects and seeds deposited on the surfaces of snow fields and on wet soil and the meadow edges of receding snow banks. They are often found feeding in flocks on the snow surface.
Elevation: above tree line (approximately >8000 in Montana).

Products:
(1) A MFWP Regional point person will summarize survey effort and sightings (and transects with no detections) and compile short 2-page summary.
(2) All detections and associated locations and observations will be submitted to MNHP

Black Rosy Finch Survey Protocol
Time of year: Start as soon in the year when high alpine habitat is accessible by foot.
End date: through August
Time of day: Start in the desired habitat type at sunrise or as close to sunrise as possible (would be ideal)
End time: noon

Conduct in suitable weather conditions: clear, calm sunny days are ideal (avoid wind, precipitation or fog)

Conduct in pairs if in areas of high grizzly bear density

Transects will be selected based on (1) predicted distribution and/or previous observations/occurrence and (2) based on logistics and accessibility to suitable Black rosy finch habitat.

The objective, as defined above, is to survey as much black rosy finch habitat as possible, therefore once in a tract of suitable black rosy finch habitat, a start point and time will be recorded and a walking route will be chosen following as much suitable habitat as possible. An end point and time is recorded when exiting tracts of suitable habitat. Through the morning it is likely that multiple tracts will be surveyed. The straight line distance between the start and end points will be a very crude estimate of the amount of suitable rosy finch habitat (and effort) surveyed if a track log is not recorded.

If possible keep a track log to be able to document more accurately the survey route chosen and distance walked in kilometers. (effort)

In summary for each habitat tract (a tract of suitable rosy finch habitat) surveyed:
o With a GPS, Record the start time and latitude/long WGS 84 (e.g. 44.45494, -114. 54935) when entering large tracks of suitable rosy finch habitat.

o With a GPS, Record the end time and latitude/long WGS 84 (e.g. 44.45494, -114. 54935) when exiting large tracks of suitable rosy finch habitat.

o Record the number and location of each black rosy finch flock observed in that habitat tract.

o Record the composition of each black rosy finch flock observed in that habitat tract, if possible.

o Record the behavior of the majority of birds in each black rosy finch flock observed in that habitat tract, if possible.

o Record the count quality *(see below)* at each stop.

o Record how you detected the bird under How detect?: **V** – visual, **C** – calling, **F** – flyover

o For each *black rosy finch or rosy finch group* observed record dominant habitat type within a ~ 100-m radius of where you saw them.

o Record the number and location of other high alpine species sightings per transect per year

Equipment required: GPS, data sheets, and clipboard
Count Quality of overall survey:
E – Excellent – quiet, good visibility, no wind, not interrupted by other noises, temperatures not too hot or cold
M – Moderate – light disturbance (wind, other noise), cold (< 32F) or hot (> 75 F)
P – Poor – hard to hear or see for some reason, really cold or hot, foggy, or wet!

Dominant Habitat type
Scree/rock (SC) : Snow field (SN) : Tundra / grassland (TU) ; Conifer forest (Con) ; O – Other (please describe)

Other species to be recorded: *Black Rosy Finch (Focal species);* White-Tailed Ptarmigan (Northern regions); Uinta Chipmunk; Uinta ground squirrel; Hoary Marmot, Pika, Gray Crown Rosy Finch (note : the ranges of these 2 species rarely overlap during breeding season – see MNHP field guide range maps).